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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JEAN E. GREENAWALT
and JAMES W. NELSON

Appeal 2016-007331
Application 13/315,981[1]
Technology Center 2100

Before JAMES R. HUGHES, CARL L. SILVERMAN, and STEVEN M. AMUNDSON, *Administrative Patent Judges*.

SILVERMAN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–12, 15, and 17–22, which constitute all the pending claims. Final Act. 2–13. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

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[1] The real party in interest is identified as Raytheon Company. App. Br. 2.

STATEMENT OF THE CASE

Appellants' invention relates to analyzing multi-dimensional data with visual and aural attributes. Abstract; Spec. ¶¶ 13–15; Figs. 1, 3. Claim 1 is exemplary of the matter on appeal (disputed limitations emphasized):

> 1. A system comprising:
> one or more of a computer processor and a computer storage device configured to:
> store a multidimensional data set;
> *map the multi-dimensional data set to one or more visual attributes and aural attributes*;
> *display a subset of the multidimensional data set on a display unit*;
> display an avatar on the display unit, wherein the avatar is configured to select a field of view of the displayed subset;
> *receive input from a user, the user input relating to an additional dimension of the multidimensional data set that is not displayed in the subset*;
> generate one or more of the visual attribute and the aural attribute relating to the additional dimension as a function of the input from a user, thereby conveying information relating to the additional dimension on the display unit; and
> *continuously receive user input, and continuously alter one or more of the visual attribute and the aural attribute, while maintaining the display of the subset of the multidimensional data set on the display unit*, thereby permitting the user to view, compare, and analyze a plurality of additional dimension subsets on the display unit *without generating an additional display of a second subset of data on the display unit*.

App. Br. 2 (Claims Appendix[2]) (filed Jan. 8, 2016).

[2] Corrected section from previously submitted Appeal Brief filed on September 21, 2015. This corrected section is in response to Notice of Non-Compliant Appeal Brief.

REJECTIONS[3]

Claims 1–12, 15, and 17–22 stand rejected under 35 U.S.C. § 112(b) or 35 U.S.C. § 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention. Final Act. 2–4.

Claims 1–12, 15, and 17–22 stand rejected under pre-AIA 35 U.S.C. § 103(a) as being unpatentable over Jones (US 2009/0282369 A1; pub. Nov. 12, 2009) in view of Dobbins et al. (US 2009/0213114 A1; pub. Aug. 27, 2009) ("Dobbins"). Final Act. 4–11.

ANALYSIS

The § 112, second paragraph, rejection

The Examiner finds "[c]laim 1 recites: 'display a subset of the multidimensional data' (line 6) and 'display of a second subset of data' (last line)" and "[i]t is unclear whether the recited subsets of data are completely the same, completely different, or have some elements that are common and some that are different." Final Act. 2. The Examiner states "[f]or the rest of the Office Action, Examiner will interpret the subsets of data as completely different." *Id.* The Examiner finds independent claims 18 and 20 suffer from the same issue and any claim dependent on an

[3]The Examiner identifies 35 U.S.C. § 112, sixth paragraph, issues in the Final Action (page 2) and subsequently states "that no rejection is made under 35 U.S.C. 112, 6th paragraph" and "[t]hus, Examiner respectfully points out that it seems that this matter is not to be decided by the PTAB." Ans. 4. Based on the record before us, we do not address 35 U.S.C. § 112, sixth paragraph, issues as there is no existing rejection.

indefinite claim is also rejected for inheriting the indefiniteness of the parent claim. *Id.*

The Examiner additionally finds the claims:

> recite a "subset of the multidimensional data" and a "second subset of data." Thus, the claims seems to have multiple recitations of the term "data" (e.g., the first data recitation being "the multidimensional data", the second recitation being the data of which a "second subset" is recited) which seems to introduce indefiniteness to the claim. Further, the term "data" in the recited "second subset of data" seems [to] belong to a number [of] possible data, one of which is the "multidimensional data" previously recited, another possibility being not the previously recited "multidimensional data", or a combination.

Ans. 3–4.

Appellants argue the "subset of the multidimensional data" and the "second subset of data" are claimed as different elements and, therefore, the subsets are different in some way and cannot be completely the same. App. Br. 8; Reply Br. 1. Appellants further argue the claims do not recite that the subsets are completely different and this limitation "cannot be read into the claims." App. Br. 8.

We are not persuaded by Appellants' arguments and agree, instead, with the findings of the Examiner. Appellants provide insufficient evidence that one of ordinary skill in the art would understand the claimed subsets meet Appellants' proffered definition.

Therefore, we sustain the 35 U.S.C. § 112 (pre-AIA), second paragraph, rejection of claims 1–12, 15, and 17–22.

The §103(a) rejection

Appellants argue the Examiner errs by finding Jones teaches the claim 1 limitation, *map the multi-dimensional data set to one or more visual*

attributes and aural attributes. App. Br. 9 (citing Jones ¶¶ 113, 139); Reply Br. 1. According to Appellants, "[p]aragraph [0113] only relates to displaying data as a point cloud, a cube, a panorama, a triangular pyramid, or a stack of planes" and "states that each pixel in a plane or node can have color information associated with it." App. Br. 9. Appellants argue paragraph 139 of Jones relates to creating a node structure from a directory of documents and "neither of these paragraphs [113 and 139] discloses the claimed feature of mapping a multidimensional data set to visual or aural attributes." *Id.* Appellants further argue "that the display of Jones's data may include visual attributes (such as a panorama or a particular pixel color; indeed, what data display does not include a visual aspect?) does not mean that subsets of the data *are mapped* to visual or aural attributes." *Id.* According to Appellants, "the visual display of data in Jones is not a 'mapping' of data; it is only a display of data." Reply Br. 1. Appellants argue "[a] mapping requires some sort of data structure in computer memory to connect and associate the data to the visual or aural attribute" and "[a] simple display of data on a computer display device does not require such a connection and association in computer memory." *Id.*

The Examiner finds Jones's teachings of a point cloud, a cube, a panorama, a triangular pyramid, or a stack of planes contain visual attributes mapped from Jones's data, as well as a subset of that data and "Jones teaches that a Quantum Matrix Qube may be displayed [as] a planar stack, with each item of the planar stack making reference to papers or documents." Ans. 5 (citing Jones ¶ 113). The Examiner finds a person of ordinary skill in the art would readily understand the papers or documents to be the subsets of data upon which the Quantum Matrix Qube is built, with the data in papers or

documents being mapped, through a process, to the visual attribute seen in Figure 3 of Jones. *Id.* A person of ordinary skill in the art would not confuse a point cloud with a cube, or with a triangular pyramid, etc., because the visual attributes of each display would sufficiently distinguish them from each other and would also not confuse two side-by-side point clouds made up of different data obtained from different papers or documents. *Id.* The Examiner finds

> [t]hat Jones multidimensional subsets of data are mapped to visual attributes is the same as saying that Jone[s]'s multidimensional data is used to generate different interactive displays representing the data, and each interactive display would clearly have different visual attributes that are mapped from each subset of data, because, although each display may be based on the same subsets of data, it is the different visual attributes that make each interactive display look different.

Id.

We are not persuaded by Appellants' argument and agree, instead, with the Examiner's findings that Jones teaches the mapping limitation. Claim terms in a patent application are given the broadest reasonable interpretation consistent with the specification, as understood by one of ordinary skill in the art. *In re Crish*, 393 F.3d 1253, 1256 (Fed. Cir. 2004).

Appellants argue Jones does not teach the limitation *continuously receive user input, and continuously alter one or more of the visual attribute and the aural attribute, while maintaining the display of the subset of the multidimensional data set on the display unit.* App. Br. 9–11. According to Appellants, Jones teaches clicking on a node and mining down further into the data via that node. *Id.* at 9 (citing Jones ¶ 73). Appellants further argue Jones teaches navigation by a user through its matrix and this navigation can

alter the structure of the presentation of nodes or a clipping of nodes to reveal an internal structure. *Id.* 9–10 (citing Jones ¶ 82). Appellants then argue Jones alters the display of its matrix upon receiving navigational input from a user and "[c]aim 1 in contrast recites that the subset of data is maintained on the display unit while a visual and/or aural attribute is altered." *Id.* at 10

Appellants argue the Examiner errs by finding Jones, paragraph 112, teaches this limitation because "permitting a user to select a node and display the data associated with that node as in paragraph [0112] of Jones is not a disclosure of Appellant's claimed feature" as "[t]here is simply no disclosure or teaching in Jones of maintaining a display of its matrix node *as is*, and then displaying additional data in some other manner (*i.e.*, some visual or aural manner), as is recited in claim 1." *Id.* (emphasis added).

Appellants argue the Examiner errs in finding Jones's controlling a camera and changing the scene slowly has the effect of maintaining the display of the subset of images because "Jones does not disclose a subset of images in relation to controlling a camera." *Id.* at 10. Moreover, even if a subset of images was disclosed, moving a camera changes the field of view of the camera, changes the data recorded by the camera and, therefore, "a dataset is not maintained by the slow movement of a camera." *Id.* 10–11.

The Examiner finds Jones teaches moving a Quantum Matrix Cube in three axes (x, y, z) and rotating in three axes (roll, pitch, yaw) and teaches that the user is able to view the various data and documents held at the nodal points of the Quantum Matrix Qube and to access the data visually. Ans. 6 (citing Jones ¶ 112, Fig. 2). In particular, the Examiner finds Jones teaches a user can continuously provide input to move and rotate the Quantum Matrix

Qube and correspondingly continuously alter a visual attribute, such as the Qube's roll, pitch, and yaw, while maintaining the display of any subset of the multidimensional data, such as the various data and documents, set on the display unit. *Id.*

Regarding Jones altering the display of its matrix, the Examiner finds the subset of data, such as the various data and documents, is maintained on the display unit while a visual attribute, such as a roll, pitch, and yaw, is altered. *Id.* at 7. Further, the Examiner finds Jones teaches maintaining display of a subset of various data and documents making up one of the six sides of a Qube at all times, while displaying an additional dimension of the multidimensional dataset via visual attributes, for example, displaying at least one of the remaining five sides of the Qube while still maintaining the display of the original side, by changing the roll, pitch, and yaw, of the Qube. *Id.* 7–8. The Qube can continuously alter its visual attributes as a function of continuous rotational input from a user, all at the same time maintaining the display of the original data subset, the one of the six sides of a Qube originally displayed. *Id.* at 8.

Regarding whether Jones discloses a subset of images in relation to controlling a camera, the Examiner finds a controlled camera is likely to be panned, as a common function of a camera. Ans. 9. The Examiner further finds "moving a camera slowly changes the field of view of the camera and only changes some of the items being viewed, while maintaining in view other items (e.g., a dataset is indeed maintained by the slow movement of a camera)." *Id.*

We are not persuaded by Appellants' arguments and agree, instead, with the Examiner's findings. Moreover, the limitation does not recite

"maintaining a display of its matrix node *as is*" as argued by Appellants; the limitation recites "maintaining the display." *See* App. Br. 10 (emphasis added). Regarding the limitation *without generating an additional display of a second subset on the display unit*, we are not persuaded of error as Appellants' argument is conclusory. *See id.*

Appellants present no persuasive argument that the claim terms should be limited to exclude the combined teaching of the cited references and present no persuasive argument that the Examiner's findings and claim interpretations are unreasonable or overbroad. Claim terms in a patent application are given the broadest reasonable interpretation consistent with the specification, as understood by one of ordinary skill in the art. *In re Crish*, 393 F.3d at 1256.

As stated by the Supreme Court, the Examiner's obviousness rejection must be based on:

> "[S]ome articulated reasoning with some rational underpinning to support the legal conclusion of obviousness" . . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.

KSR Int'l. Co. v. Teleflex, Inc., 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

In view of the above, we sustain the rejection of claim 1, and independent claims 18 and 20 which recite the disputed limitations. We also sustain the rejection of dependent claims 2–12, 15, 17, 19, and 22 as these claims are not argued separately. *See* 37 C.F.R. § 41.37(c)(1)(iv).

Appellants argue the Examiner errs by finding Jones teaches dependent claim 21[4] which recites *discrete values of [an] icon are represented by a static feature of the icon and continuous values of the icon are represented by varying features of the icon.* App. Br. 11 (citing Jones ¶¶ 172, 288, 339); *see also* Reply Br. 2. According to Appellants, paragraph 172 only mentions a multidimensional structure of nodes, paragraph 288 only relates to how drawings and photographs can be associated with such nodes, paragraph 339 only relates to how a multidimensional structure of nodes can be associated with broadcast and video entertainment services, and none of the cited paragraphs makes any mention of this limitation. App. Br. 11.

The Examiner finds Jones teaches that data represented by nodes may be both static and dynamically changing; that a node may display static, discrete content such as photographs, drawings, etc.; or live, varying content such as video of a construction site and, therefore, Jones teaches displaying discrete values of a node, for example, a node displaying a static photo and continuously varying camera feed of a construction site. Ans. 9 (citing Jones ¶¶ 172, 288, 339, 318). The Examiner finds

> [a] person of ordinary skill in the art would readily reasonably interpret one of the sides of six sides of a Qube, which include multiple of the aforementioned nodes, as being an icon which has some static features and some varying features, the variability or steadiness of the displayed nodes of the displayed side corresponding to whether the underlying data with which the node is associated is changing or not.

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[4] Claim 21 depends from dependent claim 11, which recites *wherein the display of the subset of multidimensional data comprises a data icon* and depends from claim 1, discussed *supra*. Claims Appendix 3, 5.

Id. at 10.

We are not persuaded by Appellants' arguments and agree, instead, with the Examiner's findings. *See also In re Crish*, 393 F.3d at 1256; *KSR Int'l. Co.*, 550 U.S. at 418.

Therefore, we sustain the rejection of claim 21.

DECISION

We affirm the Examiner's rejection of claims 1–12, 15, and 17–22 under 35 U.S.C. § 112 (pre-AIA), second paragraph.

We affirm the Examiner's rejection of claims 1–12, 15, and 17–22 under pre-AIA 35 U.S.C. § 103(a).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED